

عنوان مقاله:

Net Based Modelling and Finite Element Simulation in a Distributed Environment

محل انتشار:

ششمین کنفرانس بین المللی مهندسی عمران (سال: 1382)

تعداد صفحات اصل مقاله: 8

نویسندگان:

U. F. Meissner - *Professor for Numerical Methods and Informatics in Civil*

J. Ruben - *Methods and Informatics in Civil Engineering, Darmstadt University of Technology*

خلاصه مقاله:

Modern large scaled buildings are erected on rather complex foundations. Comprehensive modelling and discretization of such soil-structure-systems require a three-dimensional design to capture the changes of the geotechnical components during the construction process. The generation and administration of the complex time-dependent geotechnical and numerical models need holistic computational methods for the management of construction stages, the visualization and the proof of the engineering system. In this paper, a network based system for the co-operative work with finite element models to simulate soil-structure interactions in civil engineering has been developed in a distributed environment. The application and processing of "simulation-objects", which contain model descriptive and numerical data, were developed and tested in this context. The objects are stored in object oriented databases persistently to assure the consistence of the models. Thereby the previous approaches for distributed processes with numerical models, particularly the application of the Finite Element Method including the pre- and post-processes and with parallel computer architectures, were extended to a platform-independent communication network. An integrated system concept has been developed for the distributed processing of simulation objects; the object oriented paradigm was extended by parallelism and concurrency

کلمات کلیدی:

Finite Element Models; Mesh Generation; Parallel Computing; Objectoriented Modelling; Net Based Computing

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1116>

